gutflix
GI learning, personalised

Summary

BLAUTIA-DRIVEN SPERMIDINE SIGNALING REPROGRAMS BREG FUNCTION TO REPAIR GUT IMMUNITY IN ULCERATIVE COLITIS

Le Liu

UEG Week Berlin 2025 | Poster

IBD

October 5, 2025

Live Blautia coccoides ameliorated colitis in mice through spermidine production that activated STAT3 in regulatory B cells, with ex vivo confirmation in refractory ulcerative colitis patient samples.

KEY POINTS

- Live Blautia treatment significantly improved clinical and histological outcomes in DSS-induced colitis mice, including reduced mucosal ulceration, decreased inflammatory infiltration, and restored tight junction proteins, while heat-killed bacteria provided no benefit.
- The therapeutic effect required bacterial spermidine synthesis, as a spermidine synthesis-deficient Blautia mutant failed to restore barrier integrity or expand IL-10-producing regulatory B cells with STAT3 phosphorylation.
- Cytokine profiling showed decreased TNF-α and IL-6 with elevated IL-10 in colonic tissues, and spatial transcriptomics of UC patient biopsies identified niches where Blautia co-localized with STAT3-activated regulatory B cells and increased IL-10 transcripts.
- Ex vivo stimulation of PBMCs from anti-TNF-refractory UC patients with Blautia metabolites promoted regulatory B cell differentiation and restored suppression of TNF-α release.
- The authors conclude the findings support development of therapies aimed at replenishing spermidine-producing Blautia in refractory UC patients.

VIEW THIS CONTENT ON GUTFLIX

https://gutflix.eu/search/d/f9d84d08-a815-11f0-8e1a-0242ac140006

AI-generated summary

This summary was generated by an AI large language model based on the content transcript. It is for informational purposes only and should not be considered a substitute for clinical judgment. Always rely on your professional expertise and the full clinical context when making clinical decisions.